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United States Department of Agriculture

SERVICE AND REGULATORY ANNOUNCEMENTS

Amendment No. 9¹ to Service and Regulatory Announcements No. 93
(Agricultural Economics)

OFFICIAL STANDARDS FOR THE INSPECTION OF APPLES

UNITED STATES DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY.

By virtue of the authority vested in the Secretary of Agriculture by the following provisions of an act of Congress entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1929," approved May 16, 1928 (Pub. 392, 70th Cong.), or any future act of Congress conferring like authority:

For enabling the Secretary of Agriculture to investigate and certify to shippers and other interested parties the class, quality, and/or condition of cotton and fruits, vegetables, poultry, butter, hay, and other perishable farm products when offered for interstate shipment or when received at such important central markets as the Secretary of Agriculture may from time to time designate, or at points which may be conveniently reached therefrom under such rules and regulations as he may prescribed, including payment of such fees as will be reasonable and as nearly as may be to cover the cost for the service rendered: Provided, That certificates issued by the authorized agents of the department shall be received in all courts of the United States as *prima facie* evidence of the truth of the statements therein contained.

I, C. F. Marvin, Acting Secretary of Agriculture, do hereby amend the rules and regulations promulgated on June 30, 1927, to provide that the following shall be the official standards of the United States for the inspection and certification of apples.

OFFICIAL STANDARDS FOR THE INSPECTION OF APPLES

GRADES²

U. S. Fancy shall consist of apples of one variety which are mature but not overripe, carefully hand picked, clean, well formed, free from decay, broken skins, and bruises except those incident to proper packing, spray burn, stings or other insect injury, sun scald, visible water core, and from injury by russetting, limb rubs, hail, or mechanical, or other means. Each apple of this grade shall have the amount of color specified hereinafter for the variety. (See size requirements.)

In order to allow for variations incident to proper grading and handling, not more than a total of 10 per cent, by weight, of the apples in any lot may be below the requirements of this grade, but not to exceed one-half of this tolerance, or 5 per cent, shall be allowed for defects causing serious damage, and not more than one-fifth of this amount, or 1 per cent, shall be allowed for decay.³

U. S. No. 1 shall consist of apples of one variety which are mature but not overripe, carefully hand picked, clean, fairly well formed, free from decay, broken skins, and bruises except those incident to proper packing and damage caused by limb rubs, spray burn, sun scald, russetting, hail, visible water core,

¹ This supersedes Amendments Nos. 4 and 7 to Service and Regulatory Announcements No. 93 (Agricultural Economics).

² These grades, size requirements, and packing requirements apply to apples packed in containers other than the standard northwestern apple box.

³ Decay, scald, or other deterioration developing in storage or in transit on apples otherwise up to grade shall be considered as affecting the condition and not the grade.

disease, insects, or mechanical or other means. Each apple of this grade shall have the amount of color specified hereinafter for the variety. (See size requirements.)

In order to allow for variations incident to proper grading and handling, not more than a total of 10 per cent, by weight, of the apples in any lot may be below the requirements of this grade but not more than one-tenth of this amount or 1 per cent shall be allowed for decay.⁴

U. S. Commercial shall consist of apples of one variety which meet the requirements of U. S. No. 1 except as to color, and provided further that early varieties such as Oldenburg (Duchess of Oldenburg), Gravenstein, Lowland Raspberry (LiveLand Raspberry), Red June, Summer Hagloe, Twenty Ounce, Wealthy, Williams, and other varieties which ripen at the same period need not be mature. (See size requirements.)

In order to allow for variations incident to proper grading and handling, not more than a total of 10 per cent, by weight, of the apples in any lot may be below the requirements of this grade but not more than one-tenth of this amount or 1 per cent shall be allowed for decay.⁴

U. S. No. 2 shall consist of apples of one variety which are mature but not overripe, free from decay and from serious damage caused by dirt or other foreign matter, bruises, spray burn, sun scald, russetting, hail, disease, insects, or mechanical or other means. (See size requirements.)

In order to allow for variations incident to proper grading and handling, not more than a total of 10 per cent, by weight, of the apples in any lot may be below the requirements of this grade but not more than one-tenth of this amount or 1 per cent shall be allowed for decay.⁴

Unclassified shall consist of apples which are not graded in conformity with any of the foregoing grades.

In addition to the foregoing requirements for U. S. No. 1 and U. S. Fancy each apple of these grades must have the percentage of color shown in the table below. "Color" means a good shade of red characteristic of the variety. Faded brown stripes shall not be considered as color except in the case of the Gray Baldwin variety.

| Variety | U. S. Fancy | U. S. No. 1 | Variety | U. S. Fancy | U. S. No. 1 |
|-------------------------------|-------------|-------------|--|-------------|-------------|
| Solid red: | | | Per cent | Per cent | |
| Arkansas Black | 50 | 25 | Striped or partially red: | | |
| Black Ben Davis | 50 | 25 | Continued— | | |
| Esopus Spitzenburg | 50 | 25 | Tompkins King | 33 | 15 |
| Gano | 50 | 25 | Wagener | 33 | 15 |
| King David | 50 | 25 | Wealthy | 33 | 15 |
| Lowry | 50 | 25 | Williams | 33 | 15 |
| Opalescent | 50 | 25 | Willowtwig | 33 | 15 |
| Virginia Beauty | 50 | 25 | York Imperial | 33 | 15 |
| Winesap | 50 | 25 | Other similar varieties | 33 | 15 |
| Other similar varieties | 50 | 25 | Oldenburg (Duchess of Oldenburg) | 25 | 10 |
| Red June | 33 | 15 | Gravenstein | 25 | 10 |
| Other similar varieties | 33 | 15 | Hubbardston | 25 | 10 |
| Striped or partially red: | | | Red Astrachan | 25 | 10 |
| Delicious | 50 | 25 | Smokehouse | 25 | 10 |
| Jonathan | 50 | 25 | Stark | 25 | 10 |
| Kinnard | 50 | 25 | Summer Rambo | 25 | 10 |
| McIntosh | 50 | 25 | Other similar varieties | 25 | 10 |
| Missouri Pippin | 50 | 25 | Twenty Ounce | 25 | None. |
| Other similar varieties | 50 | 25 | Other similar varieties | 25 | None. |
| Arkansas (Mammoth Black Twig) | 33 | 15 | Red cheeked or blushed: | | |
| Baldwin | 33 | 15 | Hyde King | (?) | None. |
| Gray Baldwin | 33 | 15 | Maiden Blush | (?) | None. |
| Ben Davis | 33 | 15 | Monmouth (Red Cheeked Pippin) | (?) | None. |
| Fameuse | 33 | 15 | Winter Banana | (?) | None. |
| Nero | 33 | 15 | Other red cheeked or blushed varieties | (?) | None. |
| Northern Spy | 33 | 15 | Yellow or green varieties | (?) | None. |
| Paragon | 33 | 15 | | (?) | None. |
| Ralls (Geneton) | 33 | 15 | | (?) | None. |
| Rome Beauty | 33 | 15 | | (?) | None. |
| Stayman Winesap | 33 | 15 | | (?) | None. |

¹ Blushed cheek.

² Characteristic color.

⁴ Decay, scald, or other deterioration developing in storage or in transit on apples otherwise up to grade shall be considered as affecting the condition and not the grade.

SIZE REQUIREMENTS

The minimum size of the apples in any closed container shall be plainly stamped, stenciled, or otherwise marked on the container, as $2\frac{1}{4}$ inches minimum. It is suggested that both the minimum and maximum sizes be marked on the container, as $2\frac{1}{4}$ to $2\frac{3}{4}$ inches, $2\frac{1}{2}$ to $2\frac{3}{4}$ inches, as such marking is especially desirable for apples marketed in the export trade.

"Minimum size" means the transverse diameter of the smallest apples permitted in the container taken at right angles to a line running from the stem to the blossom end. Minimum sizes shall be stated in terms of whole and quarter inches, or whole and eighth inches, as $2\frac{1}{2}$ inches minimum, $2\frac{5}{8}$ inches minimum, $2\frac{3}{4}$ inches minimum, in accordance with the facts.

In order to allow for variations incident to proper sizing, not more than 5 per cent, by weight, of the apples in any container may be below the specified minimum size. Where the maximum and minimum sizes are both stated an additional 10 per cent tolerance is provided for apples which are larger than the maximum size stated.

PACKING REQUIREMENTS

Each package shall be packed so that the apples in the shown face shall be reasonably representative in size, color, and quality of the contents of the package.

STANDARDS FOR EXPORT⁵

(As applied to condition factors)

1. The apples in any lot shall be tightly packed when in barrels or baskets and shall be either fairly tight or tightly packed when in boxes.
2. They shall not be further advanced in maturity than firm ripe.
3. Not more than a total of 5 per cent of the apples in any lot shall be damaged by bitter pit, Jonathan spot, scald, internal breakdown, water core, freezing, decay, or other condition factors, except that—
 - (a) Not more than 2 per cent shall be allowed for apples affected by decay.
 - (b) Not more than 2 per cent shall be allowed for damage by internal breakdown.
 - (c) The apples shall be free from scald unless they are packed in oiled paper or have been especially treated with oil to prevent scald, when not more than 2 per cent of slight scald shall be permitted.

DEFINITIONS OF TERMS

As used in these grades:

1. "Mature" means having reached the stage of maturity which will insure the proper completion of the ripening process.
2. "Clean" means free from excessive dirt, dust, spray residue, or other foreign material.
3. "Carefully hand picked" means that the apples do not show evidence of rough handling or of having been on the ground.
4. "Well formed" means that the apples have the shape characteristic of the variety in the locality where grown.
5. "Fairly well formed" means that the apples may be slightly abnormal in shape but not to an extent which detracts materially from the appearance of the fruit.
6. "Injury by russetting, limb rubs, and hail" means (a) light brown limb rubs affecting a total area of over one-half inch in diameter; (b) smooth netlike russetting extending over an area of more than one-fourth of the surface in the aggregate; (c) smooth solid russetting extending over an area of more than one-tenth of the surface in the aggregate; (d) rough or barklike russetting affecting a total area of more than one-fourth inch in diameter; (e) hail marks where the injury is more than superficial or superficial hail marks exceeding one-fourth inch in the aggregate, or where the skin has been broken.

⁵ These standards apply to apples when packed in any container.

7. "Damage" means any injury or defect which materially affects the appearance or keeping quality. Anyone of the following defects, or any combination thereof the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as damage:

(a) Dark brown or black limb rubs over one-half inch in diameter, or light brown limb rubs over 1 inch in diameter.

(b) Spray burn and sun scald where the normal color of the apple is materially changed or the skin is blistered or cracked.

(c) Smooth netlike russetting extending over an area of more than one-fourth of the surface in the aggregate.

(d) Smooth solid russetting extending over an area of more than one-tenth of the surface in the aggregate.

(e) Rough or barklike russetting affecting a total area of more than one-half inch in diameter.

(f) Hail marks where the injury is more than superficial or superficial hail marks exceeding one-half inch in the aggregate, or where the skin has been broken.

(g) Scab spots which are not corked over or corked-over scab spots affecting a total area of more than one-fourth inch in diameter.

(h) More than two healed insect stings either of which is over one-eighth inch in diameter exclusive of any encircling discolored ring.

(i) Cedar-rust infection which exceeds in the aggregate an area of one-fourth inch in diameter.

(j) Worm holes.

(k) Sooty blotch or fly speck which is thinly scattered over more than one-tenth of the surface, or dark, heavily concentrated spots affecting an area of more than one-half inch in diameter.

8. "Serious damage" means any injury or defect which seriously affects the appearance or keeping quality. The following defects shall be considered as serious damage.

(a) Limb rubs, spray burn, and sun scald which seriously detract from the appearance of the apple.

(b) Smooth, solid russetting extending over more than one-half of the surface in the aggregate.

(c) Rough or barklike russetting, hail marks, or healed stings which materially deform or disfigure the fruit.

(d) Scab spots which are not corked over or corked-over scab spots affecting a total area of more than three-fourths inch in diameter.

(e) Cedar-rust infection which exceeds in the aggregate an area of three-fourths inch in diameter.

(f) Sooty blotch and fly speck affecting more than one-third of the surface.

(g) Worm holes.

In testimony whereof I have hereunto set my hand and caused the official seal of the Department of Agriculture to be affixed, in the city of Washington, this 25th day of August, 1928.



C. F. Marvin.

Acting Secretary of Agriculture.

A STATEMENT RELATIVE TO THE UNITED STATES APPLE STANDARDS

WASHINGTON, D. C., September 1, 1928.

The adoption and use of standardized grades in transactions in farm produce has eliminated much of the source of misunderstanding and dissatisfaction. Clear-cut grades, based on variations in quality, provide a practicable basis for contracts and purchases upon which buyers and sellers can deal with mutual confidence and understanding.

U. S. grades have been promulgated for apples other than those packed in the standard northwestern apple box. Five grades have been provided as follows: U. S. Fancy, U. S. No. 1, U. S. Commercial, U. S. No. 2, and Unclassified.

U. S. Fancy grade is intended for the superior, highly colored apples for which a premium is usually secured. This grade permits only very slight blemishes which are superficial and which do not affect the quality of the apples.

U. S. No. 1 is provided for apples which are graded in accordance with good commercial practices. The principal difference between the U. S. Fancy and the U. S. No. 1 is that more color is required on Fancy apples. A few more minor blemishes are allowed in U. S. No. 1 than in the U. S. Fancy grade.

The U. S. Commercial grade is provided for early apples which may be immature and which are principally marketed for cooking purposes, and for late varieties which meet the requirements of U. S. No. 1 except for color.

The U. S. No. 2 grade is provided for apples which are free from serious damage from any cause. During light-crop years this grade of apples may be shipped to advantage, but during years of heavy production it is best to send such stock to by-products plants or to local markets.

The Unclassified designation is provided for those apples which are not graded in conformity with any of the foregoing grades. Such stock should be bought and sold on the basis of description.

STATEMENT OF CONDITION

Attention is called to the statement in the grades that scald, decay, or other deterioration which develops in storage or in transit on apples which are otherwise up to grade shall be considered as affecting the condition and not the grade. When ordering apples which have been held in storage it is advisable to secure, in addition to the grade statement, information relative to the maturity and relative to the freedom from scald or decay or the percentages of scald or decay which may be in the particular lot in question.

STANDARDS FOR EXPORT⁶

(As applied to condition factors)

United States standards for export have been provided with a view to establishing a common language between exporters and the foreign buyers as to the condition of the apples at the time of inspection. It must be understood, however, that such factors as the previous handling and storage (as they affect keeping quality) or the temperatures and length of time in transit may cause a change in the condition of the apples after they have been inspected. The tightness of pack may also be affected by decay or softening in transit.

Official certificates issued on requests for certification for export will bear the statement "Lot meets United States standards for export," provided the apples meet these standards. An inspection certificate which bears this statement will show that the lot of apples so described meets the United States standards for export at the time of inspection. It means that such apples were tightly packed when in barrels or baskets and either tight or tightly packed when in boxes and not further advanced in maturity than firm ripe. It also means that not more than a total of 5 per cent of the apples were damaged by bitter pit, Jonathan spot, scald, internal breakdown, water core, freezing, decay or other condition factors except that not more than 2 per cent were affected by decay, not more than 2 per cent damaged by internal breakdown and that the apples were free from scald except when packed in oiled paper or had been especially treated with oil to prevent scald, when not more than 2 per cent were affected with slight scald.

Although apples may be certified as meeting the export standards, such a statement on the certificate does not assure the buyer that the apples will arrive at destination in a satisfactory condition. Uncertainty as to such factors as time in transit, temperature, and ventilation in stowage, makes it manifestly impossible to forecast accurately the condition of such fruit on arrival at destination. Official certification merely describes its condition at the time of the inspection.

PACKING REQUIREMENTS

The United States standards specify that the "apples in the shown face shall be reasonably representative in size, color, and quality of the contents of the package."

⁶ These standards apply to apples packed in any container.

It has long been the practice in the barreled-apple region to place the best apples in the shown face, and the custom has often been carried to extremes. The United States standard for packing is provided to discourage such extreme overfacing, which has been the cause of much dissatisfaction to buyers in both the domestic and foreign trade.

The apples used for facing should not be so different from the remainder of the apples as to cause a marked contrast. This applies to size as well as to the color and other quality factors. When 3-inch apples are used to face containers which contain mostly $2\frac{1}{4}$ to $2\frac{1}{2}$ inch fruit, the contrast is so great that the $2\frac{1}{4}$ -inch apples appear smaller than they really are, with consequent complaints. Similar objections frequently are made to containers which are faced with $2\frac{1}{2}$ -inch apples but which contain many 3-inch or larger apples in the middle of the barrel.

Most European markets prefer to have the range of sizes marked upon the barrels. Certain outlets desire medium or small sizes, whereas certain others prefer large sizes for cooking purposes.

It is suggested the barrels should be marked with both the minimum and maximum sizes, especially when they are intended for export. Such marking of barrels at " $2\frac{1}{4}$ to $2\frac{3}{4}$ " or other range of size which properly describes the fruit is far more definite than the statement of minimum size only.

BRUIISING

Apples are often unnecessarily bruised by careless picking or by improper packing methods. Such bruises are not always evident at the time of packing, but they may become very pronounced several days later, and when the barrels are opened for display the apples may present an unattractive appearance.

Adequate racking of the barrels on a solid foundation during the period of filling is very important in preventing slack barrels. Many packers attempt to make tight packs through heavy pressing instead of through frequent vigorous racking prior to pressing. Apples which are bruised by pressing tend to become soft, or to decay in storage or in transit, so that overpressing often causes more slack barrels at destination than would occur if proper racking and pressing were practiced.

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